DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
~~FEDERAL SECURITY AGENCY~~
PUBLIC HEALTH SERVICE

IN REPLYING, ADDRESS THE

Communicable Disease Center
Bacteriology Diagnostic Laboratory
P. O. Box 185
Chamblee, Georgia

January 13, 1955

Dr. Joshua Lederberg
Department of Genetics
University of Wisconsin
Madison, Wisconsin

Dear Joshua:

The point which you make in regard to carry over of phage activity is a distinct possibility which we hope to clarify within the next two months. Brown has finished his course work here but is being transferred to Texas on March 1. However, we have already talked over the problem of more critical testing of the six motilized strains for presence of phages, other than omega, which might have inducing activity for these or other strains. We shall attempt also to answer the question which you raise by more intensive examination of the original 6 susceptible strains. It is possible that they are normally carrying phage which has some inducing activity just as Ohio strain was carrying the omega phage. In other words, inducing activity of omega phage lysates of motilized anthrax cultures has no significance if the filtrates of corresponding non-motile parent culture unexposed to omega will give the same result. We very well may have not prepared and tested the latter carefully enough. I am of the opinion that the approach which you suggest or the one I just mentioned will give some definite answers. We have to keep in mind that probably all anthrax cultures are demonstrably lysogenic.

In answer to your question the lysates of the motilized cultures could have contained as much as 2-3% of the original omega. This could be enough to induce motility in especially sensitive strains. However, this does not explain the induction of motility in the Louisiana strains by a lysate of motilized Ax 16 since this lysate had no effect on any of the other 6 anthrax cultures which were susceptible to the omega phage. It seems to me at the moment that you may be right about UK19NV (carry over) but that a different explanation is necessary for the Louisiana culture results.

Will let you know when and if something develops. We certainly appreciate your suggestions and your taking time to write.

Cordially yours,

William B. Cherry

(mrs)

William B. Cherry, ~~Ph.~~ D.
Officer-in-Charge
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P.S. Eric Brown has applied for an NIH or NRC fellowship to continue some phases of this work at University of Kansas where he will work for a Ph.D. beginning fall of '55. He is particularly interested in explaining other induced ~~mutation~~ characteristics, especially serological. We feel that some or all of the strains with which we worked have undergone some subtle but, none the less, definite changes which may well be serologic and measurable. If so, these would have an important bearing on disease production and might be a clue to the difference in cereus and anthrax as regards pathogenicity.

I suggested to Eric that he might like to correspond with you in regard to his problem, particularly the genetic implications. He is anxious to do so and I am sure you will hear from him in the future. I hope you won't mind.

WBC